VOL. 6, No. 9 SEPTEMBER 1952

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

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SCHEDULE OF MEETINGS

8-13 September	**Expert Committee on Influenza, first session, Geneva**
15-20 September	**Expert Committee on Public-Health Administration, second session, Geneva**
22-27 September	**Expert Committee on Leprosy, first session, Geneva**
22-27 September	**Expert Committee on Tuberculosis, sixth session, Geneva**
29 September-4 October	**Expert Committee on Mental Health, third session, Geneva**
4-10 October	**Expert Committee on Bilharziasis, first session, Porto Rico**
13-18 October	**FAO/WHO Joint Committee on Brucellosis, second session, Florence**
20-25 October	**Expert Committee on Biological Standardization, sixth session, Geneva**
27 October-1 November	**Expert Committee on the International Pharmacopoeia, eleventh session, Geneva**

FIRST INTERNATIONAL SYMPOSIUM ON YAWS CONTROL

An International Symposium on Yaws Control [1] was held in Bangkok, Thailand, from 14 to 30 March 1952, under the auspices of the World Health Organization, in collaboration with the Government of Thailand and with the assistance of the United Nations International Children's Emergency Fund (UNICEF). This was the first symposium to be concerned with yaws, a disease which affects millions of persons in the underdeveloped areas of the world. The idea of thus holding a series of discussions on yaws control grew from recent developments both in the laboratory and in the field.

The discovery that a single intramuscular injection of as little as 2 ml of procaine penicillin G in oil with aluminium monostearate (PAM) is an effective, non-toxic, and cheap treatment for the disease has recently been consolidated by practical experience in its mass application during WHO treponematoses-control projects in Haiti, Indonesia, and Thailand. Never in medical history has a disease been treated out of existence ; for several of the communicable diseases, however, the likelihood of reducing the vast reservoirs of infection is at last in sight. Brief as the experience in this new approach to yaws control has been, it may be taken as an indication of possible success in the near future. Dr. C. R. Rein, of New York University, made this point forcibly when he stated, " The cause of yaws is known. A simple, safe, and practical form of ambulatory therapy, based on penicillin . . . is available. It is now possible to control the infectious stage and ultimately eradicate the disease in a relatively short period of time. There is no reason why millions of people throughout the world should be affected with this crippling and disfiguring . . . disease ".

Some seventy-five workers—among whom were several WHO Regional Advisers and members of field teams—from such widely separated parts of the world as the Belgian Congo, Brazil, India, Indonesia, Jamaica, New Caledonia, Liberia, and the Philippine Islands met in Bangkok to take part in the symposium. The first two days were devoted to considering the present state of medical knowledge of yaws. It was emphasized that the incidence of the disease is high when the economic and social status of the population is low, and that infection occurs principally by contact. If mass treatment and resurvey, accompanied by improvement of rural public-health facilities, are followed by socio-economic progress, yaws may eventually be eliminated.

Discussions subsequently developed around the five phases of a yaws-control programme : (1) preliminary analysis of the problem, (2) develop-

[1] For detailed programme, see *Chron. World Hlth Org.* 1952, **6**, 42. A selection of papers read at the symposium will be published in a forthcoming number of the *Bulletin of the World Health Organization.*

ment of methods, (3) demonstration, survey, and training phase, (4) expansion phase, and (5) consolidation phase, in which the gains of the mass campaign are integrated into the permanent public-health structure of the area. An interesting point which emerged from the discussions was the usefulness of subprofessional personnel. In any public-health scheme in an underdeveloped area, the possibility of using relatively inexperienced workers to carry out simple serodiagnostic procedures is of considerable economic importance. Several speakers pressed the need for persistence in yaws-control campaigns, since premature abandonment of treatment and examination, even after virtual elimination of the disease, may result in its recurrence within a short time.

A consideration of the role of international organizations in yaws control concluded the formal agenda. The introduction of this theme into such a discussion is, in itself, an indication of a new phase in the attack on communicable diseases. International co-operation here is, of course, by no means new ; the novelty lies in the shift of emphasis from segregation of the affected areas, by quarantine measures, to direct collaboration between authorities outside and governments within the area.

During the last six days of the conference, the participants visited the site of operations of the WHO/UNICEF yaws-control team at Ubol, made a critical appraisal of this project, and went on to discuss such practical aspects as nomenclature and field records.

The stimulating exchange of views and information which the symposium provided will undoubtedly have repercussions in terms of improved health in those parts of the world where yaws is most widespread. Throughout the tropics, wherever the disease occurs, a yaws-control campaign may be used as the nucleus of a firm and lasting, general, rural, public-health programme.

WHO TUBERCULOSIS RESEARCH OFFICE, COPENHAGEN

Progress Report

Since its establishment three years ago, the Tuberculosis Research Office (TRO) has developed an international programme of studies in connexion, particularly, with mass BCG-vaccination campaigns which are being carried out in many parts of the world. Extensive investigations on BCG and BCG vaccination have been undertaken in response to a need for more precise knowledge concerning the importance of various factors which might affect the vaccine itself, how it might be improved and perfected, and concerning its effectiveness in the prevention of tuberculosis.

An indispensable part of BCG vaccination is the tuberculin test, which is used not only for selecting non-infected persons who may benefit from vaccination, but also for measuring the success of vaccination in terms of the degree of allergy produced. Tuberculin testing has therefore been the subject of important studies on the method of measuring allergy, the interpretation of tuberculin reactions, and the specificity of the test for epidemiological study of tuberculosis among different peoples in widely separated areas.

In the actual working-out of such a broad research programme, the TRO has co-operated closely with many national and international groups and has played an increasingly significant role in the worldwide interchange of information on tuberculosis research. During 1951, specialists and public-health officers from more than twenty countries came to Copenhagen and spent from a few days to several months discussing and studying the work of the Office. Consequent upon WHO's recent acceptance, with UNICEF, of the task of assisting governments in carrying out BCG programmes, the TRO has assumed greater responsibilities for giving technical advice, training field personnel, and supervising statistical work in the conduct of BCG campaigns.

The studies on BCG vaccination have demonstrated an urgent need for closer collaboration between field and laboratory activities. During the past few years, emphasis has been placed on field studies in human populations, with limited facilities being devoted to parallel laboratory research. Arrangements have recently been made to improve this latter, and important, aspect of the research programme. As an expression of continued interest in international tuberculosis work, the Danish Government has agreed to make its remaining United Nations Appeal for Children (UNAC) funds available for the establishment, within the premises of Statens Serum-institut, of a special laboratory which, in co-operation with the TRO, will be devoted to intensive research in tuberculosis immunization.

The present report is not intended to be a comprehensive review of the work of the TRO. The results of certain interesting studies have been selected for brief discussion, especially with reference to the practical application of the findings of international BCG-vaccination programmes now in progress.

Results of Mass BCG-Vaccination in Various Countries

Systematic and extensive surveys of post-vaccination allergy following mass BCG-vaccination campaigns have been made in Ecuador, Egypt, Greece, India, and Syria by carefully trained personnel, in co-operation with the International Tuberculosis Campaign. Analysis of the results showed marked geographic differences in reactions, even in some cases where the same batch of vaccine had been used. In contrast to the findings in Denmark, post-vaccination allergy among groups of schoolchildren

retested in Egypt was very low; and Greek, Syrian, Ecuadorean, and Indian children showed intermediate levels of allergy. Were these differences caused by changes in the quality of the vaccine or the tuberculin or, possibly, by racial variations in the capacity of the children to respond to BCG ? A series of studies was planned with a view to answering these questions, and a special team was sent to Egypt in September 1951 to carry out these plans. Comparable studies were made simultaneously in Denmark. Although these investigations are not yet completed, results from some of the projects are of considerable importance. For example, it has been found that exposure of BCG, in ampoules, to sunlight, and even daylight, as discussed in the next section, has a drastic effect on the potency of vaccine, which may be a principal cause of the low post-vaccination allergy found in the more southern countries.

Studies of BCG Vaccine and Techniques of Vaccination

BCG-vaccine studies, conducted in co-operation with the International Tuberculosis Campaign and the Statens Seruminstitut, Copenhagen, have yielded a number of unexpected findings, and have also confirmed and enlarged the results reported earlier.[1]

Effect on BCG vaccine of direct sunlight and daylight

Particularly notable have been the results of studies on the effects of exposure of BCG vaccine to direct sunlight.[2] The low levels of post-vaccination allergy found in Egypt and elsewhere suggested the possibility that strong sunlight might affect the potency of the vaccine. A study carried out to test this hypothesis showed that as little as one half-hour of exposure of BCG, in ampoules, to Egyptian sunlight resulted in a tremendous reduction in the mean size of post-vaccination tuberculin reactions and of local vaccination lesions, and in the colony-count of viable BCG organisms. Daylight without the direct rays of the sun produced the same effect on the vaccine after four hours of exposure. As BCG-vaccinating teams frequently work outdoors in many places, or arrange to do their work where the daylight is strongest, these findings are of great importance for the conduct of BCG campaigns. Moreover, this potent effect of sunlight may well account for the different results of vaccination which have been reported from various countries.

Effect of diluting the vaccine

Through the use of various dilutions of standard vaccines, it has been found that there are considerable variations in the allergy-producing

[1] *Bull. World Hlth Org.* 1950, 3, 1, 279
[2] *Bull. World Hlth Org.* 1952, 5, 245

capacity of different batches of vaccine from the same laboratory, as well as from different laboratories. These variations cannot be explained as quantitative differences in the number either of living or of dead organisms. It appears that there must be qualitative differences, that BCG organisms vary owing to some unknown factor or factors. This has an important bearing on the problem of comparing and standardizing BCG vaccines, as it means that one vaccine cannot always be made comparable with another simply by changing the amount of BCG per dose, as has been the usual practice of BCG-production centres.

Effect of living and of dead organisms in vaccines

BCG vaccine heated to 80°C for two hours in order to kill the organisms was found to produce very weak, but durable, allergy. In fact, the tuberculin reactions after vaccination with killed vaccine are larger after one year than at ten weeks, indicating that allergy develops more slowly from dead than from living vaccine. Another important finding is that the allergy-producing capacity of killed vaccine is greatly enhanced by the addition of very small amounts of living vaccine. Standard-strength vaccine with as little as one part living and 999 parts dead organisms produces allergy at the end of one year which is practically as high as the allergy from some batches of regular, presumably living, standard vaccine. The significance of these findings is not entirely clear at the present time, but the method suggests a way to study the question of the mechanisms of allergy production.

Effect of time and temperature of storage

The vaccines used in these studies have shown no apparent reduction in allergy-producing capacity after storage in the dark at refrigeration temperature for at least two and one-half months, at room temperature (20°C) for one month, at 30°C for one week, or at 37°C for five days. There would thus seem to be no reason why most vaccines must be used within ten to fourteen days of preparation in order to obtain satisfactory allergy. Fresh vaccine for use in any part of the world could be transported at monthly, rather than weekly, intervals—at least if it were kept cold and not exposed to light.

Effect of volume or depth of injection

Variations in the depth of injection, from very superficial to almost subcutaneous, or in the volume of vaccine injected from 0.05 ml to 0.2 ml, instead of the usual dose of 0.1 ml, have little effect on the level of allergy produced. It is therefore very doubtful whether the technique used for intradermal vaccination can be blamed or credited for the marked differences in allergy seen in different countries.

Studies of Tuberculin Sensitivity

Tuberculosis patients in four different countries

It is not the intention of any mass BCG-campaign to vaccinate persons suffering from active tuberculosis, but it is inevitable that a certain number will come for examination, not knowing that they have the disease. What proportion of tuberculous persons are likely to have negative tuberculin reactions and, therefore, to be vaccinated ?

To answer this question, groups of patients in tuberculosis sanatoria were tuberculin-tested with the same technique and the same batch and dose of purified protein derivative (PPD) in four widely separated countries: Denmark, Egypt, India, and the USA. All 967 patients received a Mantoux 1 TU (tuberculin unit) test; those with a reaction of less than 6 mm received 10 TU. The results showed that all the tuberculosis patients had reactions to the Mantoux 10 TU test measuring at least 6 mm; all were positive according to the usual standard.

Another, even more striking, finding was that the level of tuberculin sensitivity was practically the same in the patients tested in the different countries. In fact, one could almost superimpose upon each other the distribution curves for the Mantoux 1 TU reactions of all four groups. It would be premature to interpret these results as indicating that patients all over the world react in the same way. But the possibility is suggested that a consistent level of tuberculin sensitivity is associated with tuberculous disease wherever it is found, irrespective of race, place of residence, nutrition, prevalence of intercurrent infections, and, perhaps, many other factors. In addition, these findings indicate that the same criterion for a positive reaction to a low dose of tuberculin can be used in different countries without fear that persons with active tuberculosis will be vaccinated by mistake.

Specificity of tuberculin reactions

In the fall of 1949, a BCG research team working in India spent several weeks in the Darjeeling area giving tuberculin tests to workers and their families living on tea plantations. Scattered over the mountainside, the tea gardens are quite close to one another, yet they differ in altitude from 2,000 to 6,500 feet above sea level. Mantoux 1 TU tests were given to all of the group under study Persons not responding with at least 6 mm of induration were given 10 TU and, in turn, those of this group with less than 6 mm were given 100 TU. Later analysis of the results carried out in Copenhagen revealed some remarkable findings.[3]

[3] Bates, W. E., Busk, T., & Palmer, C. E. (1951) *Pub. Hlth Rep., Wash.* **66**, 1427

Tuberculin testing at various altitudes above sea level in this mountainous region indicated that the frequency of tuberculous infection was about the same throughout the area. However, striking differences were found in the incidence of reactors to the high dose at different altitudes, pointing to the existence of another, unknown, infection which is most prevalent at the lower altitudes. The agent causing this " non-specific " infection is probably closely related to the tubercle bacillus, as it also produces tuberculin sensitivity and thereby greatly complicates the use of the tuberculin test in selecting persons for BCG vaccination and, later, for measuring the effect of vaccination.

These findings, supplementing those in certain other countries, particularly in the USA,[4] clearly emphasize the need for intensive study of tuberculin sensitivity—how it develops and what it means, especially how it may be influenced by " non-specific " infections.

Tuberculin allergy as a family trait

For many years it has been believed that susceptibility to tuberculosis tends to run in families, that the children of tuberculous parents are more predisposed to develop the disease than children of healthy parents. Scientific study of this subject has been almost impossible because factors such as the time of infection and the intensity and the duration of exposure to tuberculosis cannot be accurately determined. The influence of hereditary factors is now being studied, however, through the effects of BCG vaccination.

BCG produces a mild, harmless, tuberculous infection which, in many respects, resembles natural infection by virulent tubercle bacilli. But with BCG vaccination the infection, unlike natural infection, occurs at a known time with a relatively uniform, constant, and measurable dose of infecting organisms. The first of the current investigations,[5] conducted in conjunction with a BCG-vaccination programme among schoolchildren in Denmark, supports the age-old belief in hereditary tendencies to tuberculosis by showing that there actually are family differences in the capacity of children to develop tuberculin allergy after vaccination : the children in some families develop relatively strong allergy; those in others, quite weak allergy.

The next step is to determine if the degree of allergy developed by these children is related to the incidence of tuberculosis among their close relatives. A study now in progress may indicate whether or not allergy is related to tuberculosis immunity, a question which has been discussed and argued for many years, but which still remains unanswered.

[4] Palmer, C. E., Ferebee, S. H. & Petersen, O. S. (1950) *Pub. Hlth Rep., Wash.* **65**, 1111

[5] Palmer, C. E. & Meyer, S. N. (1951) *Pub. Hlth Rep., Wash.* **66**, 259

EXECUTIVE BOARD

Tenth Session

The tenth session of the Executive Board was held from 29 May to 3 June 1952. The Board elected Dr. M. Jafar, Director-General of Health, Pakistan, as Chairman ; Professor G. A. Canaperia (Italy) and Dr. A. H. Taba (Iran) as Vice-Chairmen ; Dr. S. Hayek (Lebanon) and Dr. J. N. Togba (Liberia) as Rapporteurs.

In his opening address, Dr. Jafar stated that, contrary to certain opinions expressed during the Fifth Health Assembly, the distinction between developed countries and underdeveloped countries still existed. All those who lived in, or had once passed through, underdeveloped countries were aware of the untold suffering and misery existing there. Above all, WHO must assist these countries to organize their public-health services. The work of international teams could have no enduring results until such services existed. The most essential element in the underdeveloped countries was to facilitate the training of medical and auxiliary personnel, whereas, in the more developed countries, it was above all essential that governments be pressed to entrust to public-health administrators the tasks and responsibilities which should properly be theirs. This was the only way in which health programmes could be fruitful.

There were about thirty items on the agenda, mostly of a financial and administrative nature : duration of future assemblies, technical discussions at the Sixth Assembly, the status of Associate Members, criteria for assignment to regions, facilities for certain countries to pay part of their contributions in soft currency, etc. In addition, the Board was required to deal with various questions relating to expert committees and to note some of their reports.

Expert Committees

The Board took note of the reports of the Expert Committee on the International Pharmacopoeia (tenth session) and of its Subcommittee on Non-Proprietary Names (fourth session). It authorized publication of the report of the Expert Committee on Trachoma. Since there are no international regulations concerning this disease, the Board referred the report to the Committee on International Quarantine for study of quarantine measures which might be taken against trachoma, or measures which, on the other hand, might not be necessary in the case of this disease. At the present time, some governments refuse entry into their territory of persons suffering from trachoma.

The Board also took note of the first report of the Joint Expert Committee on the Physically Handicapped Child (United Nations, ILO,

UNESCO, and WHO) and authorized its publication. It recommended that this committee now extend its studies to the various categories of handicapped children and to the problems presented by these children in underdeveloped countries, even though the health services of such countries might as yet be too elementary to make positive action possible. In such countries maternal and child health demonstration teams might undertake preliminary studies.

The Board reconsidered the terms of reference of the Joint FAO/WHO Expert Committee on Nutrition ; since FAO and WHO are jointly responsible for nutritional problems, this committee will in future act as an advisory body for both organizations, giving its advice on all general and technical questions and assisting the two organizations in the preparation of their respective programmes.

Technical Discussions

For the technical discussions at the Sixth World Health Assembly, the Fifth Health Assembly suggested a somewhat broad subject within which the Board could choose a more restricted theme which would easily lend itself to examination in a few meetings of working groups. The Board decided to limit the discussions to the :

"... study of methods of applying modern health techniques of a preventive and curative nature to give the most effective and economical results on a long-term programme in relation to the following communicable diseases : (*a*) tuberculosis, (*b*) syphilis, and (*c*) the typhoid group of fevers."

These diseases are extremely important from the point of view of public health and call for attention on the part of WHO.

The whole question of technical discussions during future assemblies will be considered by the Board at its eleventh session.

Future Studies by the Executive Board

The Assembly had invited the Board, as it did last year, to undertake the study of two particular aspects of the functioning of WHO. Those selected for this year are : (1) professional education and training programmes, including fellowships ; (2) regional organization. The Board drew up a plan for each of these studies, that with regard to education and training to include :

"(1) Objectives of professional and technical education and training: development of WHO policies in relation to these objectives

(2) Programme of education and training services :

(*a*) Studies of educational trends and the promotion of teaching standards

(*b*) Preparation of professional and auxiliary health workers (including fellowships and assistance to educational institutions)

(*c*) Preparation of advanced qualified professional health workers (including fellowships and assistance to educational institutions)
(*d*) Promotion of new techniques and developments

(3) Education and training aspects of other WHO activities

(4) Organizational implications

(5) Outlook for future planning."

Organizational and Financial Questions

In order to meet difficulties encountered by certain Member States, the Board :

... authorized the Director-General to accept currency other than US dollars or Swiss francs for such proportion of the contributions to the annual budgets as can be fully utilized ;

... decided to undertake at its eleventh session a study of the rules and criteria for determining the assignment of Member States to particular regions ;

... requested the Director-General to ask the opinion of all Member States as to what the rights and obligations of Associate Members should be, so that this question may be examined at the Board's eleventh session. (WHO now has three Associate Members : Southern Rhodesia, Tunisia, and Morocco [French]).

It was suggested that the Sixth Health Assembly should last two weeks, with three extra days for the technical discussions. It will open on 5 May 1953. The eleventh session of the Executive Board will commence on 12 January 1953 in Geneva.

MEMBERSHIP OF THE EXECUTIVE BOARD

The designating country is given in parentheses after each member's name. Newly designated members are indicated by an asterisk (*).

Dr. A. Aguilar, Director, Health Demonstration Area, Director-General of Health, San Salvador (El Salvador) *(Alternate to Dr. J. Allwood-Paredes, absent)*

Dr. G. Alivisatos, Professor of Hygiene at the University and Professor of Epidemiology at the School of Hygiene, Athens (Greece)

*Dr. O. Andersen, Professor of Paediatrics, University of Copenhagen (Denmark)

Dr. C. van den Berg, Director-General for International Health Affairs, Ministry of Social Affairs and Public Health of the Netherlands, The Hague (Belgium)

Dr. A. L. Bravo, Chief, Tuberculosis Department, Public Health Service, Santiago (Chile)

Professor G. A. Canaperia, Chief Medical Officer, Office of the High Commissioner for Hygiene and Public Health, Rome (Italy) *(Vice-Chairman)*

Dr. S. Daengsvang, Deputy Director-General, Department of Health, Bangkok (Thailand)

*Dr. M. J. Ferreira, Professor of Hygiene, State Faculty of Medicine, Rio de Janeiro (Brazil)

Dr. S. Hayek, Chief Medical Officer, Ministry of Health and Welfare, Beirut (Lebanon)
Dr. M. Jafar, Director-General of Health, Karachi (Pakistan) (*Chairman*)
*Dr. O. Leroux, Assistant Director, Health Insurance Studies, Department of National Health and Welfare, Ottawa (Canada)
*Dr. Melville Mackenzie, Principal Medical Officer, Ministry of Health, London (United Kingdom of Great Britain and Northern Ireland)
Professeur J. Parisot, Doyen de la Faculté de Médecine de Nancy (France)
*Dr. A. H. Taba, Director, Health Department, Iranian State Railways, Teheran (Iran) (*Vice-Chairman*)
Dr. J. N. Togba, Director of Public Health and Sanitation, Monrovia (Liberia)
*Dr. H. B. Turbott, Deputy Director-General of Health, Wellington (New Zealand)
Dr. W. G. Wickremesinghe, Director of Health Services, Colombo (Ceylon)

The member designated by Cuba was absent.

Reports of Expert Groups

INSECTICIDE-DISPERSING EQUIPMENT

The role of insecticides in the control of certain diseases can no longer be questioned. Large-scale campaigns against malaria, in particular, have served to confirm the importance to public health, and even to food production, of direct action against the insect vectors of disease. Therefore, none of the factors involved in disease-control with the aid of insecticides should be neglected. With this in view, the Expert Committee on Insecticides at its first two sessions [1] concerned itself with specifications to which insecticide preparations should conform. At its third session, held from 30 July to 4 August 1951, the committee dealt specifically with the equipment used in dispersing insecticides. The report on this session was published in August 1952 as No. 46 in the *Technical Report Series*.[2]

Nomenclature

The committee's report establishes a standard nomenclature for the different types of sprayers and for their component parts. For the first time a list of precise definitions concerning spraying and dusting apparatus can be supplied to different countries and to manufacturers throughout the world. This attempt at a global terminology of technical expressions used in describing such equipment provides valuable, even indispensable, information for general users of insecticide-dispersing equipment as well as for those who are especially concerned with problems of insect control.

[1] *World Hlth Org. techn. Rep. Ser.* 1950, **4**; 1951, **34**; see also *Chron. World Hlth Org.* 1951, **5**, 147.
[2] *World Hlth Org. techn. Rep. Ser.* 1952, **46**, 36 pages, price: 2/-, $0.25, Sw. fr. 1.—, or Fr. fr. 50.—

Specifications

The tentative specifications previously adopted for stirrup-pumps are restated, in terms general enough to allow some latitude to manufacturers since slight differences in construction do not affect the efficiency of the equipment.

Insecticides in dry-powder form are dispersed by means of dusting apparatus. There are four general types of hand-operated dusters, but the committee confines its specifications to two of them : the hand-carried, hand-activated, plunger type; and the front-carried, hand-activated, rotary type.

The report also gives specifications for various accessories, such as cut-off valves and clamp-type hose connexions. For compression-type sprayers, a comparative table given in an annex makes it possible to determine whether or not commercially available sprayers meet the specifications established by the committee at its second session.

Other Questions

The increasing use of mechanically operated sprayers led the committee to include in its report data comparing the efficiency and operating cost of sprayers utilizing mechanical compression with those utilizing manual compression.

The report also contains a table listing the physical requirements for hose and descriptions of methods for testing hose.

BIOLOGICAL STANDARDIZATION

The establishment of international standards for therapeutic substances was carried one step further by the Expert Committee on Biological Standardization at its fifth session, the report on which was published 10 August 1952 as No. 56 in the *Technical Report Series*.[1]

The committee established the provisional reference preparation of diphtheria toxoid, plain, as the international standard. This toxoid is relatively highly purified and has proved to be of the same order of potency as current therapeutic preparations in various countries. The committee authorized work preparatory to defining an international reference preparation of diphtheria toxoid, adsorbed. Assignment of unitage to both of these toxoids was deferred in order to collect data on the relation between

[1] *World Hlth Org. techn. Rep. Ser.* 1952, **56**, 23 pages; price : 1/3, $0.15, Sw. fr. 0.60

the immunizing potency of plain and adsorbed toxoids in man, with a view to assigning to the international standard for diphtheria toxoid, plain, a unitage approximately equivalent to that of the proposed international reference preparation of diphtheria toxoid, adsorbed.

An international standard for tetanus toxoid was established. It was found that a single standard can at present be used for the assay of both plain and adsorbed preparations. The international unit of tetanus toxoid was defined as the immunizing activity of 0.03 mg of the international standard.

The batch of purified protein derivative (PPD) of tuberculin prepared by Dr. Florence Seibert from a human strain of the tubercle bacillus was accepted as the international standard for PPD mammalian tuberculin.

The committee decided to establish as the international standard for oxophenarsine the existing Joint Canadian-British standard for this arsenical.

International standards for histolyticus antitoxin (second international standard), sulfarsphenamine (third international standard), and D-tubocurarine were confirmed and are now available, the first at the Statens Seruminstitut, Copenhagen, and the latter two at the National Institute for Medical Research, London.

An international reference preparation for penicillin K and provisional international reference preparations for cardiolipin and lecithin were set up.

The committee authorized work preparatory to the establishment of international reference preparations for melaminyl trypanocides and pyrogens, international standard preparations for PPD of avian tuberculin and hyaluronidase, second international standards for ACTH and penicillin, and third international standards for vitamin A and insulin.

By examining the problems of veterinary standards, the committee showed that WHO recognizes the close relationship between veterinary and human problems in medicine. International standard preparations for Q-fever antiserum and *Brucella abortus* antiserum are to be established.

The standardization of diagnostic procedures was considered, and the committee recommended that WHO should investigate the desirability of publishing " recommended methods " of diagnostic tests, such as those used for bacteriological diagnosis of tuberculosis and serological diagnosis of syphilis.

An important feature of the report is a complete and up-to-date list, appearing as an appendix, of all the current international biological standards.

Review of WHO Publications

MASS TREATMENT OF SYPHILIS IN AN INDIAN PROVINCE

The WHO venereal-disease-control demonstration carried out in Himachal Pradesh, India, in 1949 and 1950 [1] included an experiment in mass treatment of syphilis in an isolated, rural population in the Ghund area, located in the foothills of the Himalayas. The results of this mass-treatment project have been published in the *Bulletin of the World Health Organization*.[2]

The seat of the government of Himachal Pradesh is Simla. The province has no railways, and roads are few; transport is by foot, horse, or mule.

There are 21 hospitals and 43 dispensaries in the province, each of the latter being run by an official with some medical training who has a small stock of medicines, including mercury and sulfathiazole, at his disposal. Syphilitic persons desiring treatment buy their arsenicals in the town and have the injections administered at the dispensary. However, their very low income makes it impossible for them ever to purchase enough of the necessary drugs to effect a complete cure.

Throughout the province, an indigenous system of medicine, Ayurveda, is favoured more than Western medicine. The inhabitants of the mountainous regions still make use of the " medicine man ", and quackery is rife.

Malaria, tuberculosis, leprosy, venereal diseases, fly- or water-borne enteric diseases, scabies, endemic goitre, deficiency diseases, cataract, diseases due to unprotected exposure to the elements—all contribute to keeping the population at a low level of health. Ignorance, promiscuity, poverty, polygamy, and superstition facilitate the transmission of venereal diseases.

The demonstration team was established at Simla in May 1949. Upon its arrival, a venereal-disease-control campaign was organized by the health services of the province. A venereologist was appointed to direct two venereal-disease-control dispensaries, and a special laboratory and out-patient services were organized. Serological tests and treatment for positive cases were introduced in certain hospitals and in dispensaries for pregnant women. A survey of the prevalence-rate of syphilis was made, and training courses for physicians, nurses, and laboratory workers were instituted. Within the first 17 months, 29 persons had completed their professional training, and some of the students had already begun venereal-disease-control work in at least seven hospitals and clinics of the province and country.

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[1] *Chron. World Hlth Org.* 1952, 6, 90

[2] *Bull. World Hlth Org.* 1952, 5, 377 (Article in English with summary in English and French)

Fig. 1. Terrain in the Ghund

g. 2. Equipment the team en route for the Ghund

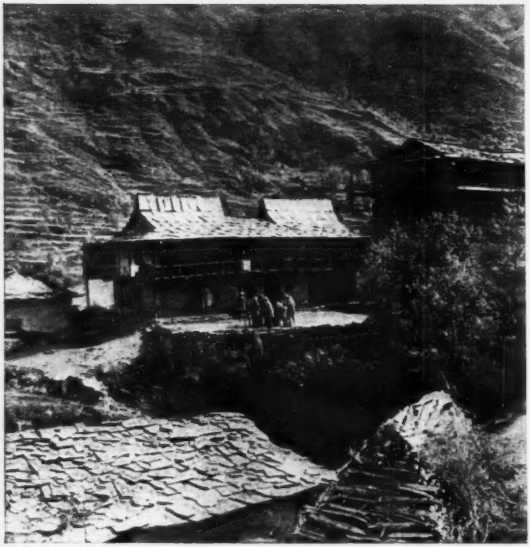

Fig. 3. Schoolhouse used as working and li quarters at Bagain Station, Ghund. Constructio typical of the dwellings in the region.

Fig. 4. Balcony of schoolhouse, used as kitchen and dining-room for field workers. A meal is being prepared over a primus stove.

Fig. 5. Work-tab on dirt floor of stab used as examinatio and treatment-roo Durbar Ghund

7. Typica
men of the

Fig. 6. Schoolchildren waiting to be examined

7. Typical hill-
men of the Ghund

Fig. 8. Typical hill-men of the Ghund

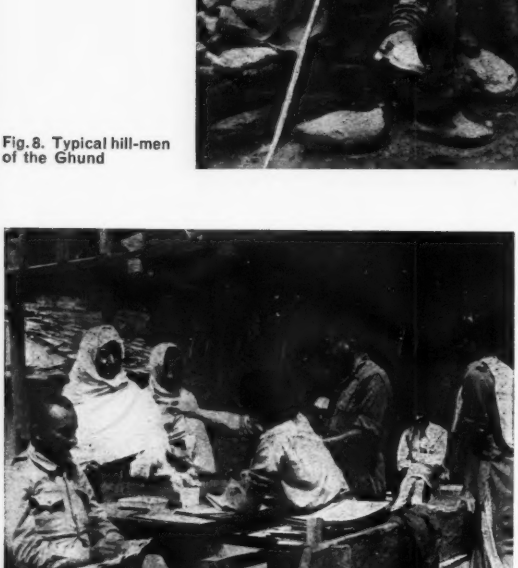

Fig. 9. Bagain Station, Ghund. The petition-writer seated at the end of the table, checking the two wom from his list and acting as interpreter. A traine physician and a team-nurse are observing.

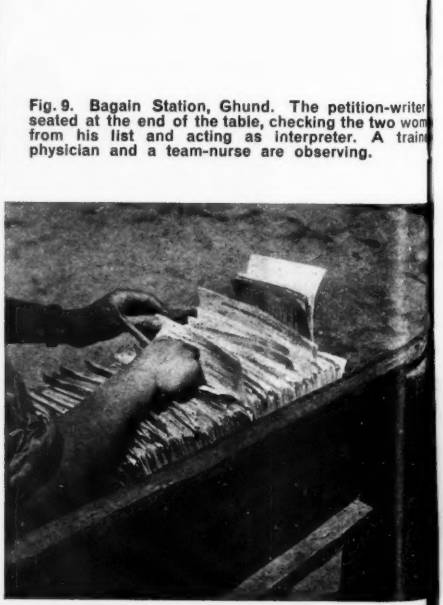

Fig. 10. Records of patients

For serological diagnosis, the WHO team used the simplest slide tests —Meinicke and VDRL.[3] The Kahn standard test was also used, when time and circumstances permitted. As soon as the laboratory was in a position to carry out a sufficient number of serological tests, and when some idea of the different degrees of infection in the various regions had been obtained, the Ghund district, near Theog, where syphilis seemed to be particularly widespread, was chosen as the demonstration area.

The Ghund district has an area of approximately 13 square miles covering the crest and sides of a high ridge which separates the valley of the Giri from one of its tributaries ; it has an elevation of 4,100-8,615 feet. The area is sufficiently isolated to obviate the introduction of new infection, and the population is sufficiently stable to offer an opportunity for long-term follow-up surveys.

The WHO team, together with the district magistrate and the local physician, drew up a publicity programme for the purpose of informing the inhabitants about the aims of the team and of familiarizing them in advance with examination and treatment procedures. Very satisfactory results were achieved ; and, in spite of a certain reluctance among some of the inhabitants, the team succeeded in examining and treating nearly everyone. However, it was impossible to examine children under six months old or to take blood samples from children under five years of age, because their families absolutely refused permission.

In November 1949, the team moved to Durbar Ghund, one of the two villages in the district, Bagain being the other. This is one of the poorest villages in the whole province : conditions are primitive, life is hard, water is scarce, and sanitation is extremely summary. The report describes the attitude and medical history of the population. Syphilis is by far the most widespread of the venereal diseases. Of 354 families, only 80 (22.5%) were free from syphilis.

The treatment schedule adopted by the team consisted of a single injection of 300,000 units of procaine penicillin G in oil with 2% aluminium monostearate. (This dosage was chosen because of the scarcity of penicillin in the province at the time of the survey ; supplies have since improved.) Without giving the same results as large doses of aqueous penicillin administered over a period of seven days, this treatment adequately met the immediate requirements, being simple and inexpensive, providing a satisfactory minimum cure-rate, and rapidly reducing the reservoir—and hence the spread—of infection. It should be noted that, in this mass-treatment project, penicillin was administered before the serological results were known.

The blood samples were sent to Simla, where two slide-tests were performed. The quantitative determination of positive sera was carried

[3] Venereal Disease Research Laboratory, Chamblee, Ga, USA—slide test with cardiolipin

out by the Meinicke method. In the absence of clinical symptoms, seropositive cases were diagnosed as latent syphilis (asymptomatic) ; no spinal-fluid examinations were made. A few doubtful or false-positive cases were classed as " indeterminate ". Since there was no evidence of yaws or malaria, and very little of leprosy, the risk of false-positive reactions was reduced to a minimum. The experience of the team in the course of a year's work gave every reason for assuming that the serological data obtained were highly accurate.

Two further surveys were made at six-month intervals after the first. During the second, only 29.1 % of those treated six months earlier consented to a new blood test. The inhabitants of the region are often underfed and consider that one drop of blood corresponds to a hundred drops of food. They agreed to the first test and to the treatment but saw no useful purpose in the control test.

During the third visit, a year after the first, the team was able to test only an even smaller percentage of the population. The serological titre had dropped in a very large majority of cases examined, and in a certain number the reaction had become negative. Some idea of the results obtained from the treatment given may be gained from the fact that the head of the dispensary in the region declared that he had seen only about twelve new cases of syphilis in the past twelve months as against 66 in the six months preceding the treatment. It appeared also that some of the new cases observed after November 1949 originated in other areas.

From their experiences the authors conclude that large groups of people may be assembled and successfully treated even in isolated and underdeveloped rural areas and that, by means of slide tests which can be easily carried out, a laboratory may be established in the field and have serological results the day after blood samples have been taken. A team consisting of one or two clinicians, one serologist, one nurse, one laboratory technician, and one clerk can examine and treat up to 350 persons a day—provided they have the support of the local authorities. The Ghund survey demonstrated that the administration of 300,000 units of procaine penicillin G in oil with 2% aluminium monostearate gives adequate results.

The opposition of the population to the taking of a second blood sample after treatment indicates that it is fruitless to hope for an accurate serological evaluation of the results of mass treatment. The members of the team observe that, in order to have examined and treated the resistant cases and new lesions which had appeared since November 1949, they should have given advance notice of their second visit, saying that they had come to give treatment for any sores or illnesses whatsoever. Those with open lesions and other symptoms would then have presented themselves for treatment. Moreover, if the control survey had thus been limited to treatment of new lesions and resistant cases, without blood samples being taken from asymptomatic subjects, it could have been carried out

by one physician, eliminating the necessity of sending a whole team to the area.

The report proves that, in spite of all the difficulties, and even in regions as little developed as the Ghund area, it is possible to control venereal disease successfully, keeping within the financial and medical resources of the country, and without offending the susceptibilities of the population.

BIOLOGY OF ANOPHELES GAMBIAE

A study entitled " Biologie d'*Anopheles Gambiae* " has just been published in the *Monograph Series* of the World Health Organization.[1] It is particularly valuable since it represents the most recent work on the subject at present available. All who are interested in the problem of malaria will find here detailed and accurate information on the behaviour of its principal vector.

On the basis of the many research projects he has carried out in French West Africa, the author, M. M. Holstein, Chargé de recherches de l'Office de la Recherche scientifique Outre-Mer, Paris, undertakes to give a comprehensive picture of the biology of *A. gambiae*, thus throwing fresh light on the conflicting results of certain previous studies. His aim is twofold : to make an exhaustive examination of those aspects of the biology of *A. gambiae* which are of interest in malaria control by insecticides, and to discover and establish the existence of anopheles races or varieties.

Some climatological data and a description of the research methods he employed precede the detailed study of the morphological characteristics of each phase in the life history of *A. gambiae*. Individual chapters are then devoted to the biology of the early and adult stages.

After examining the variations of *A. gambiae* var. *melas*, the author presents his theories on the existence of two forms of *gambiae*, a zoophilic and an anthropophilic form, differentiated by their maxillary index and their trophic preferences.

An annex gives details of the geographic distribution of *A. gambiae* in Africa, a table of sporozoitic indices for certain regions, and a key for the graphic representation of those anopheles common in French West Africa.

The study is completed by a bibliography comprising almost four hundred references.

[1] Holstein, M.H. (1952) *Biologie d'*Anopheles Gambiae *: Recherches en Afrique-Occidentale Française*, Geneva (*World Health Organization : Monograph Series*, No. 9) 176 pages, price : 10/–, $2.00, Sw. fr. 8.–, Fr. fr. 640

STATISTICS : TWO NOTEWORTHY PUBLICATIONS

In its *Annual Epidemiological and Vital Statistics* series, WHO has just published the second of two volumes covering the war period 1939-46, entitled " Cases of and Deaths from Notifiable Diseases ",[1] and the first volume for the period 1947-9, entitled " Vital Statistics and Causes of Death ".[2] These two publications will be of great value to all those who are interested in statistics.

It had not previously been possible to assemble coherently figures relating to notifiable diseases for the period of the war. The war, political upheavals, changes in frontiers, and mass migrations made regular registration of infectious diseases impossible in a great number of countries. In some instances, the relevant documents were either destroyed or lost. The task of finding, assembling, checking, and correcting existing data was enormous. Although there are gaps and imperfections in the statistics finally collated by WHO, they nevertheless constitute the only official international document for the period.

In preparing the volume concerning notifiable diseases, duly revised data from official publications were used as well as replies to questionnaires addressed to national health administrations and statistical offices. The notifiable diseases—30 in number—range from plague to puerperal infection, and include the rickettsioses, malaria, leprosy, syphilis, influenza, and communicable diseases of childhood. Figures for cases and deaths are given for more than 150 States or territories.

The work is presented in a clear and practical manner. A large table is devoted to each disease and shows, by country and for each of the years from 1939 to 1946, the total annual number of cases and of deaths and the number of cases and deaths per month or per four-week period, in order to show the very interesting seasonal fluctuations. At the end of each table certain countries are included for which only annual totals are given, either because the total figures were the only data available or because they were too small to be broken up into periodic figures; similarly, only the annual figures are given for about a dozen diseases which have no marked seasonal characteristics. Full notes are appended to all the tables.

The work " Vital Statistics and Causes of Death, 1947-1949 " is a large volume of 746 pages. The data are drawn from official reports published by national and municipal statistical and public-health administrations, from supplementary information furnished by those administrations, and from the replies of various countries to certain questionnaires sent out by the Statistical Office of the United Nations.

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[1] World Health Organization (1952) *Annual Epidemiological and Vital Statistics* 1939-1946, Part II, Geneva, 202 pages. Price : £1; $4, or Sw. frs 16.—
Bilingual edition : French and English

[2] World Health Organization (1952) *Annual Epidemiological and Vital Statistics* 1947-1949, Part I, Geneva, 746 pages. Price : 70/–; $10; Sw. frs 40.—.
Bilingual edition : French and English

The tables of figures are preceded by a foreword and an introduction in which there are some comments on natality- and mortality-rates. In 1949, the highest birth-rate was in Guatemala (51.5 per 1,000 inhabitants), and the lowest in Trieste (10.6 per 1,000). As compared with the average for 1936-8, the birth-rate increased in 59 countries and decreased in 20 others. The most marked increase was in Panama (Canal Zone), where the birth-rate rose from 10.0 in 1936-8 to 32.5 in 1949. The biggest drop was in Paraguay : 23.5 in 1949 as against 36.0 in 1936-8. In six countries (Guatemala, British Guiana, Venezuela, Bahamas, Faroe Islands, Iceland), there was a constant increase in the birth-rate for the period 1946-9; in one country only—Italy—was there a steady decrease.

In 1949, the lowest general mortality-rate was that of Northern Rhodesia, with 5 deaths per 1,000 inhabitants. The highest mortality-rate was in Greenland—41.4 per 1,000. In all countries with the exception of Greenland, where a whooping-cough epidemic caused the death in that year of nearly all children under the age of one year, the 1949 mortality-rate was lower than that of 1936-8; and in most countries there was a steady decrease between 1946 and 1949.

A chapter giving the area and population of the countries of the world and the population of selected large cities, according to the most recent censuses, is followed by vital statistics for the years 1946-9 : nuptiality, natality, fertility according to the age of the mother, reproduction-rate, general mortality, specific mortality-rates by age and by sex, infant mortality, and neonatal mortality; for purposes of comparison, the mean figures for the period 1936-8, or for some prewar series, are also mentioned in most of the tables.

The chapter on the causes of death is by far the longest in the volume; it gives the distribution of the total deaths by cause, in accordance with the headings of the 1938 International Abridged List. These data are shown by sex for the period 1946-9, and then by sex and by age for each year separately. Other tables are devoted to : the mortality-rates for specific diseases in about 50 large towns and in selected groups of towns; deaths of children under five years from selected causes, by age and by sex; and deaths from cancer and tuberculosis according to location, age, and sex. Finally, there are extracts from some very recent mortality tables : mortality coefficients, number of survivors, and expectation of life by sex and at certain ages. An annex contains graphs showing the evolution, from the beginning of the century, of mortality from specified infectious diseases in some countries, geographical maps of the various regions of the World Health Organization, and a list of WHO Member States as of 31 December 1951.

An alphabetical index is included for convenience in consulting this voluminous work.

Obviously, as stated in the foreword, these statistics should be treated with a certain amount of caution; and care should be exercised in making comparisons based on them. The diversity in the methods of registration in the various countries, and the lack of precision and the gaps in the certificates of causes of death still prevent the statistics for different countries from being entirely comparable.

CANCER MORTALITY IN THE TWENTIETH CENTURY

A double number of the *Epidemiological and Vital Statistics Report* is devoted to cancer mortality between 1900 and 1949 in fifteen European and eight non-European countries.[1]

The author, Dr. M. Pascua, Director of the Division of Health Statistics, quotes the words of Professor Greenwood of 25 years ago : " It is probable that by the gradual improvement in accuracy and completeness of the medical statistics of all nations we can best prepare the way for a really illuminating survey of the cancer problem."

This work contains cancer-mortality figures by year, by sex, by site of tumour, and by age for each country studied, whenever possible. The introduction and notes accompanying the tables of figures are no less important than the tables themselves. Graphs are included to illustrate the conclusions drawn.

Like all statistics based on certificates giving the cause of death, covering very different countries and particularly disturbed periods, these figures are necessarily incomplete : in some cases, the causes of death were not registered; in others, the archives were destroyed by war. Nor are the figures as exact as they should be. There are various reasons for this, but the chief source of inaccuracy is the methods of filling out death certificates. For example : (1) in some countries a national nomenclature is used which bears no relation whatever to the international nomenclature, which has itself been revised five times during the period in question; (2) certificates often mention the metastasis which has finally caused the death of the patient instead of the initial tumour; (3) certificates do not mention cancer if a cancer patient has died from some intercurrent disease; (4) at the request of families, physicians issuing certificates sometimes indicate some cause of death other than cancer since there are still prejudices in this connexion.

On the other hand, deaths due to other causes are often diagnosed as being due to cancer, while those due to cancer may in turn be attributed

[1] *Epidem. vital Statis Rep.* 1952, **5**, 1-144

to other causes. Nevertheless, there has been considerable progress in diagnosis during the past 50 years. Today it is possible to detect tumours which could not be diagnosed in 1900. It is a fact, for example, that the proportion of deaths due to " senility " or to " unknown or ill-defined causes " has dropped considerably in most countries. There is no doubt that formerly many deaths due to cancer were entered under these headings. This accounts to some extent for the increase in the number of deaths notified as due to cancer. The ageing of the population is another factor in this increase, since cancer principally attacks persons of the older age-groups. The tables in the volume in question demonstrate that the percentage of persons over the age of 60 years has increased in nearly all countries, and that in some it has doubled and even trebled, as in Denmark.

The following conclusions may be drawn from this publication :

1. There are very marked differences in cancer mortality in the various countries studied, both as to the total number of deaths and as to the relative degree of importance of the various localizations of tumours.

2. On the basis of the official population figures and on the number of deaths officially attributed to cancer, cancer mortality has clearly increased in nearly all the countries under consideration. Is this due to a " very slow progressing, and not declining, epidemic ", or to an apparent increase due to progress in diagnosis and to better medical certification of causes of death ? That is a question which it is difficult to answer.

3. As regards age, there has been a marked increase in recorded cancer mortality among persons in the older age-groups, over 70 years. Nevertheless, it must not be forgotten that the number of deaths attributed to " senility " or to " causes of death unknown or ill-defined " has decreased.

4. Mortality from cancer of the buccal cavity and pharynx and from neoplasms of the skin has not increased; in many countries it has even diminished.

5. The rates of increase in mortality from cancer of the digestive organs and peritoneum vary very significantly from country to country, and also from one sex to the other within the same country. The available data are very divergent and irregular.

6. The number of deaths from cancer of the lungs has risen considerably everywhere. In some countries there were 25 times more deaths from cancer of the lungs in 1949 than in 1900, and there has been a constant increase from 1900 to 1949, as in England and Wales. In this connexion the author refers to the work of the Medical Research Council, London, on the dangers of tobacco smoking. Undoubtedly there are other factors which may have contributed to this spectacular increase. Cancer of the lungs is perhaps one of the forms of cancer which is more easily diagnosed today than 50 years ago.

7. Mortality from cancer of the uterus has remained stationary or has decreased to some extent.

8. There has been a constant increase in the number of deaths due to cancer of the breast.

9. The mortality-rate from cancer of the urinary organs has increased in both sexes, but particularly in men.

Dr. Pascua emphasizes the fact that this study is very incomplete. For example, the relationships between cancer and race and between cancer and occupation have not even been touched upon, since national statistics with regard to these subjects are still scarce and fragmentary. If the study of the problem of cancer mortality is to be fruitful, it will be necessary to obtain far more satisfactory statistics than those presently available.

Notes and News

Protocol Ending Brussels Agreements on Potent Drugs Signed

The Protocol terminating the 1906 and 1929 Brussels Agreements for the Unification of the Formulae of Potent Drugs was signed at Geneva on 20 May 1952 by 16 countries. Dr. P. J. J. van de Calseyde (Belgium) presided at the ceremony.

The governments which signed the Protocol propose to replace the prescriptions of the two Brussels Agreements by the corresponding prescriptions laid down in the *Pharmacopoea Internationalis*.

The Protocol will enter into force when ten States, parties to either or both of the Brussels Agreements, have become parties to the Protocol and certification has been transmitted by the Belgian Government to the Secretary-General of the United Nations.

The following Governments have signed the Protocol : Belgium, Denmark, Egypt, Federal Republic of Germany, Finland, France, Grand Duchy of Luxembourg, Greece, Iceland, Italy, Netherlands, Norway, Spain, Sweden, United Kingdom of Great Britain and Northern Ireland, and United States of America. In addition to these, the following States are also parties to the Brussels Agreements : Austria, Bulgaria, Byelorussian Soviet Socialist Republic, Cuba, Hungary, Poland, Rumania, Switzerland, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, Vatican City, and Yugoslavia.

Publication on International Health Organizations

In *International health organizations and their work* [1] Dr. Neville M. Goodman, a former Assistant Director-General of the World Health Organization, gives the first comprehensive account of the origins and present extent of international health work.

[1] London, J. & A. Churchill, Ltd., 1952. xi + 327 pp., 53 illus.

After an introductory chapter which answers the question " Why ' International ' Health ? ", Dr. Goodman describes the history of quarantine and of the various International Sanitary Conferences. Further chapters are devoted to the Office international d'Hygiène publique, the Health Organization of the League of Nations, the health work of UNRRA, and the World Health Organization. The work of old and new regional health organizations, other intergovernmental agencies concerned with health, and voluntary agencies in the international health field is also described. At the end of each chapter there is a bibliography and a " Note on Sources ".

With the publication of this book there is now available a standard work of reference for all those who wish to know more of the history, purposes, and scale of international co-operation on health matters.

Vaccination against Yellow Fever

The Executive Board, at its tenth session, approved the Instituto de Medicina Tropical, Lisbon, Portugal, as an authority qualified to issue international certificates of immunity against yellow fever. A complete list of the centres authorized to issue international vaccination certificates against this disease was published in June as a Supplement to the *Weekly Epidemiological Record.*[2]

Health Survey in Korea

At the request of the United Nations Korean Reconstruction Agency (UNKRA) WHO has agreed to undertake a health survey in Korea. This survey will provide the basis of plans for a long-range health programme financed by UNKRA. Within the first six months WHO experts will present a preliminary report; more detailed surveys of specialized fields such as hospital planning, training of nurses, etc., will follow. Mr. J. Donald Kingsley, Agent-General for Korea, has emphasized the need for immediate action in view of the unsettled military situation. WHO has already sent to Korea a team comprising eleven medical officers, five public-health engineers, and five public-health sanitarians. At the beginning of 1952 this team, which was assigned to emergency relief work, was transferred to UNKRA; and since then WHO has helped to recruit additional medical and auxiliary personnel for health work in Korea.

Seven Agreements between Iraq and WHO

At the beginning of April 1952, the Iraqi Government and WHO signed seven agreements, under the terms of which WHO offers assistance to Iraq in projects involving leprosy control, rural health, malaria, the creation of a tuberculosis centre and a maternal and child health centre, BCG vaccination, and the teaching of modern research methods. The antimalaria project is already under way (see page 280).

The tuberculosis demonstration and training centre, which is being set up in Baghdad, will probably be ready by the end of the year. The Iraqi Government has already assigned a fund for this purpose and chosen a site, and the team which will run the centre is being assembled. In view of the proposed BCG-vaccination campaign, provision is being made to give tuberculin tests to about 800,000 children within two years.

Since the incidence of leprosy in Iraq is high, WHO is to send an expert to study the epidemiological characteristics of the disease there and to advise the government on how best to combat it. It is also expected that the equipment of the leprosy colony at Amara will be modernized.

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[2] *Wkly epidem. Rec.* 1952, **27**, Supplement to No. 23, 5 June

Malaria

Malariology courses

Under the auspices of the World Health Organization, two international courses in malariology were organized this year : one, chiefly for the European Region, in Lisbon, Portugal, and the other, for the African Region, in Lagos, Nigeria.

The course in Lisbon was under the direction of Professor F. J. C. Cambournac and was given at the Malaria Institute of Aguas de Moura and at the Institute of Tropical Medicine, in Lisbon. It began on 16 June 1952 and lasted two and a half months. WHO invited experts from several countries to participate as lecturers, as was done last year for the same course given in Lisbon.

The African malaria course, which was organized by the Malaria Service, Medical Department, Government of Nigeria, was directed by Dr. L. J. Bruce-Chwatt and was held from 2 June to 30 July 1952. His Excellency the Governor of Nigeria opened the series. WHO, for this course as for that at Lisbon, invited foreign experts to take part in the teaching—Sir Gordon Covell, Dr. P. F. Russel, and Mr. M. H. Holstein.

For both courses the Organization granted a certain number of fellowships. The course in Europe can be considered somewhat as a continuation of the tradition established by the Malaria Commission of the League of Nations in 1926. The African malaria course was the result of a recommendation formulated at the Malaria Conference in Equatorial Africa, which took place in Kampala, Uganda, in November-December 1950.[3]

WHO team begins work in Iraq

One of the seven agreements concluded in April between Iraq and WHO aimed at the control of malaria. Since May a member of the WHO malaria team has been making on-the-spot preparations in Baghdad. At the beginning of July, he was joined by the Indian malariologist Dr. Sonti Dakshina Murty, former chief of the malaria section of the Ministry of Health in Madras and now team leader, and by Mr. François Lachance, parasitologist, who was previously attached to the Defence Research Board of Canada. Malaria-control demonstrations were to begin at the end of July in the Tanjero Valley, Sulaimaniya, northwest of Baghdad—a region selected for its particularly high incidence of malaria.

Control operations begin at Taiwan (Formosa)

A WHO team arrived at Chao Chow on 15 May. The DDT and other supplies sent by WHO were already awaiting them; the remainder of the insecticides and sprayers required will be provided by the local government and the Mutual Security Agency of the USA. This campaign is likely to be particularly effective since the species of malaria vector in Taiwan is very susceptible to DDT; the fact that Taiwan is an island may well facilitate the complete eradication of the disease. Moreover, a network of antimalaria dispensaries is already in existence, and excellent roads make the malarious areas easily accessible. Spraying began in the south of the island and spread to the more densely populated districts, where malaria is rife among the rice farmers and coal miners.

Sarawak : preliminary survey

A WHO malaria adviser left Manila at the beginning of July for Sarawak, where he will help the local authorities to fight malaria—one of the two scourges of this territory, the other being tuberculosis. The adviser will first set up a pilot project to determine whether spraying the inside walls of houses is effective in this region. Three species of anopheles are suspected of transmitting malaria. Large-scale residual spraying opera-

[3] *Chron. World Hlth Org.* 1951, **5**, 95

tions have not yet been attempted in Sarawak; if this first project succeeds, the method will be used in a campaign covering the whole territory.

Tuberculosis and BCG

BCG-vaccination campaign in Aden ends

A BCG-vaccination campaign began in Aden last January, its aim being the tuberculin-testing of children and adolescents under 18 years of age. The international team, with the help of government health officials, finished its task in May, after having tested more than 31,000 children, vaccinated 8,000 of them, and retested most of the school population. Local personnel have been instructed in BCG-vaccination methods. They will be assisted in continuing the campaign for another year by supplementary aid in the form of equipment and supplies from the United Nations International Children's Emergency Fund (UNICEF). The vaccine used was prepared by the State Serum Institute, Agouza, Cairo.

BCG-team in Sarawak goes into action

A team of BCG-vaccination specialists left Manila at the same time as the malariologist referred to above and will stay about nine months in Sarawak to demonstrate the most practical methods of BCG vaccination and to train personnel to carry on the work. The team will first vaccinate some 50,000 people in major centres of the colony; all children and young persons will then be given tuberculin tests and the negative reactors vaccinated. The two team chiefs, Dr. Ole Hagen, of Norway, and Nurse Eva Friis, of Denmark, have previously worked with the International Tuberculosis Campaign, the former in Poland and India, the latter in Germany and Egypt.

Venereal Diseases

Control campaign in Egypt

The Egyptian Ministry of Public Health and WHO have selected the village of Edfah (population 9,000), near Sohag, as the site of the first intensive campaign ever undertaken against skin and venereal diseases in Upper Egypt. Edfah is one of the many villages which labourers leave for work in the ports and urban areas of Egypt.

After blood specimens have been taken, the patients will be treated and the epidemiology of venereal diseases in the country will be studied to determine whether the labourers carry these infections back to their villages from the urban areas. Measures will then be taken to ensure, as far as possible, treatment of the patients before they return to their homes. This survey is expected to have considerable repercussions throughout the country.

The clinical field-work at Edfah will be carried out by an Egyptian team comprising two physicians, a hakima, six nurse-aids, two social workers, and administrative personnel. All were trained at the Hod El Marsoud Hospital in Cairo by the WHO advisory team to Egypt and its matching staff. The course covered the newest serological methods as well as the administrative and social aspects of such a project. Members of various social services also took part and will voluntarily assist in the campaign.

Blood specimens taken at Edfah will be sent to Cairo for examination by the WHO team, which will, at the same time, continue its demonstrations and training courses for other Egyptian personnel.

This campaign, which is scheduled to last for four to six weeks, is directed by Dr. I. H. Nagi Bey, Director of the Venereal Disease Section, Egyptian Ministry of Public Health, and his assistant, Dr. M. Afifi. It represents the first step in a national programme of venereal-disease control, in the development of which other international agencies may be asked to assist.

Introduction of penicillin treatment in Ethiopia

The Ethiopian Ministry of Public Health, with the technical assistance of WHO, has introduced at Addis Ababa mass penicillin treatment for venereal diseases. WHO sent a team of three specialists to Ethiopia, and the Filoha and Tekla Haimanot clinics have been placed at their disposal. Serological tests will be carried out in the laboratories of the Institut Pasteur of Ethiopia. The project will include a survey of the distribution of venereal diseases throughout the country—it is already known that the incidence of syphilis is high. The two principal members of the team working at Addis Ababa are Dr. J. F. Marques, former head of the Department of Venereology of the Lisbon Health Centre, and Dr. R. Netter, until recently Chief of the Laboratories at the Claude Bernard Hospital, Paris.

Cerebrospinal Meningitis in the Sudan

The incidence of cerebrospinal meningitis in the Sudan has increased from 6,000 cases in 1950 to 57,000 in 1951. In actual fact, since news spread of the cures achieved with sulfonamides, cases are reported far more frequently. Treatment with sulfa drugs has not, however, succeeded in halting the epidemic. WHO specialists sent from Khartoum suggested an alternative method : instead of treating only the reported cases, the entire population might be injected with procaine penicillin in oil, thus reducing the incidence of the disease below the danger line which results in an epidemic. This method has been put to the test in two villages in the Nuba Mountains in the province of Kordofan. In other villages sulfa drugs are being administered to all the inhabitants.

Survey of Industrial Health Conditions in Iran

Iran, which has improved legislation to protect the health of workers, has requested the help of two international organizations in putting these laws into effect. WHO (through its Eastern Mediterranean Office) and the International Labour Organisation have therefore appointed a specialist in industrial health to survey the health conditions of factories in Iran and to advise the Ministry of Health on how to improve them. The specialist, Dr. Léon Lewis, of Berkeley, California (USA), will visit the major towns of Iran to study conditions among miners, workers in handicrafts and carpets, and match and tea factories.

Views on WHO

International Pharmacopoeia

In a review of G. M. Findlay's *Recent advances in chemotherapy* (3rd ed., Volume I, 1950), appearing in a recent issue of the *Quarterly Review of Biology* (1951, **26**, 443), C. Jelleff Carr makes the following comment :

". . . Findlay has succinctly pointed out the 2 main factors which act as brakes on the progress of chemotherapy : the present unsatisfactory classification of bacteria and the confusion that results from the multiplicity of names given by national pharmacopeial committees, proprietary firms, and non-official compendia. The attempt which the World Health Organization is making to tackle this very complicated problem will win the praise of pharmacologists, clinicians, and chemists alike."

The Work of WHO, 1951

The *Medical Officer* (1952, **87**, 168) pays a tribute to the work of WHO in a review of the 1951 *Annual report of the Director-General :*

" The report on the work of the World Health Organisation during the year 1951 is an imposing document of importance to all mankind, but it will not receive the attention that it merits. We doubt if one person in 1,000 will hear of it, and only about one in 100,000 possess it. The United Nations took over the health organisation from the League of Nations without any alteration of its aims and philosophy, but being a much more powerful body than the defunct League it can do much which the League wanted to do but was powerless to perform. The United States, by refusing to join, damned the League from its inception, but she did take part in the health organisation, and now, as the predominant partner in the United Nations, she is enthusiastic to further the work of WHO to reach its goal. Its aim is a universal health service as near perfection as applied science can make it, so as to give all persons on earth equal chances of attaining health. For this purpose it encourages all national and voluntary agencies which have health as their object. Its main work at present is to help those countries where the health services are poorly developed, or which present special problems which their national governments are unable to solve without outside aid. On request, WHO will help any nation to advance its health programme with technical advice and, when necessary, with equipment and personnel without infringement of national aspirations or sovereignty.

" Countries with a highly developed health service do not need help of this kind, but indirectly they gain much benefit from WHO, for disease has no national frontiers and the health of one country is largely dependent upon that of others. Moreover, every country benefits greatly from the researches which WHO carries out and which no single country could pursue on the same scale.

" International Hygiene, as a reality, originated in the Office d'Hygiène Publique established in 1907 and now taken over by WHO, in which Sir George Buchanan took an active part. It began in a small way with a limited objective, but Buchanan visualised its extension and, had he lived, would have appreciated this latest annual report of WHO with great satisfaction.

" WHO covers an enormous field, its activities reach from such purely local and topical matters as helping a backward country to establishing a system of nursing, to ridding the earth of pestilences. The annual report is not a book for everybody but all engaged in health work will find something of interest in it. It is well got up, beautifully printed and profusely illustrated."

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